Hull & Associates, Inc.

3401 Glendale Avenue
Suite 300
Toledo, Ohio 43614
(419) 385-2018
fax: (419) 385-5487

November 12, 1998

Mr. Ron Nabors
State of Ohio Environmental Protection Agency
Division of Emergency and Remedial Response
347 North Dunbridge Road
Bowling Green, Ohio 43402-9398

RE: Analytical Results and Updated Schedule for the Water Treatment System at the Toledo Tie Treatment Plant Ohio ID No. 348-1377 Lucas County
KMC001.100.0011

Dear Mr. Nabors:

As requested, enclosed are the analytical results for the sample taken from Williams Ditch on October 13, 1998 (KMC001-BKGD-101398-T348) and the batch treatment effluent sample taken on October 29, 1998 (KMC001-EFF1-102998-T348). A summary table of these analytical results and the corresponding Ohio EPA Surface Water Discharge Standards for Warmwater Habitats is also enclosed. Based on these analytical results, it appears that the effluent's pH level is the only parameter of concern. This will be reanalyzed when I receive the remaining analytical results for the samples taken to date.

On October 29, 1998, Hull & Associates, Inc. (HAI) representatives measured the pH of both effluent storage pools and the effluent from the carbon filter. The pH measured in the field ranged from 9.20 to 9.30 S.U. Since this exceeded the Ohio EPA's Surface Water Discharge Standard for Warmwater Habitats (6.50 - 9.00 S.U.), IT Group decided to lower the pH by adding muriatic acid.

After the acid was added on November 5, 1998, HAI representatives measured the pH in the field using an Orion 1230 pH meter (HAI pH meter) on November 6, 1998. Due to some difficulties with the HAI pH meter that persisted after the HAI pH meter was recalibrated, it was determined that the pH meter was not producing readings that were as precise as the readings from the pH meter used by IT Group. Therefore, IT Group's pH meter was used to obtain the pH readings for both effluent pools. The pH of both effluent pools after the addition of the muriatic acid ranged from 7.58 to 7.76 S.U. Based on these readings and the analytical results enclosed, IT Group discharged this batch treatment (approximately 60,000 gallons) on November 6, 1998.

Per our discussion on November 6, 1998, IT Group began treating water with the intent to begin continuous discharge that day. Per Ohio EPA's request, a HAI representative collected an effluent water sample from the carbon filter effluent sampling tee and measured the pH in the field of the sample and the effluent pool. HAI's field measurement of the pH of the sample and the effluent pool was 9.12 and 9.10 S.U., respectively. As a result, IT Group chose not to begin continuous discharge until the pH in the effluent pools was lowered.

On November 6, 1998, 0.5 gallons of muriatic acid was added to each effluent pool. On November 9, 1998, a HAI representative collected an influent and effluent water sample. In addition, the HAI representative measured the pH of the influent, the carbon filter effluent, and both effluent pools. Those readings were 7.56, 8.66, 8.85 and 8.74 S.U., respectively. Since the pH readings for each effluent pool and the carbon filter effluent were within the acceptable range for Ohio EPA's Surface Water Discharge Standards, IT Group discharged approximately 60,000 gallons on November 9, 1998.

In order to accommodate further investigation of the storm sewer system along Arco Drive, IT Group has chosen to temporarily cease continuous discharge from the water treatment system. It is anticipated that when continuous discharge is reinitiated, there may not be a sufficient volume of treated water to justify continuous discharge on a daily basis. As a result, HAI representatives will collect an effluent sample only on days that water is discharged, until a total of five continuous discharge effluent samples have been collected. At that point, HAI representatives will collect an effluent sample on a weekly basis for the next eight weeks. After that, an effluent sample will be collected every other week until the water treatment system is no longer in operation. A revised schedule of sampling activities is also enclosed.

Please let me know if you have any questions or concerns. I can be reached at (419) 385-2018.

Sincerely,

Elena R. Tembreull

Elena R. Tembreull
Design Engineer

ERT/jlj

Enclosure

ct: Mr. Scott Lockhart, P.E., Hull & Associates, Inc.
Mr. Keith Watson, Kerr-McGee Chemical, LLC
Mr. Peter Goetz, Kerr-McGee Chemical, LLC
Mr. Bill Spedding, OHM Remediation Services, Corp.
Mr. Ralph Dollhopf, USEPA, Region 5

Kerr-Megee Chemical, LLC
Toledo Tie Treatment Site
Time Critical Removal

Summary of Water Treatment System Analytical Results

ANALYTE NAME	METHOD	UNITS	OHIO EPA SURFACE WATER DISCHARGE STANDARD OUTSIDE MIXING ZONE MAXIMUM FOR WARMWATER HABITATS	KMC001-BKGD-101398-T348 COLLECTION DATE: 10/13/98		KMC001-EFF1-102998-T348 COLLECTION DATE: 10/29/98	
				RESULT	MDL	RESULT	MDL
pH @ 25 DEG C	SM18-4500	Std.	6.5-9.0	7.19+	1	8.98+	1
SOLIDS, SUSP. 104 DEG C	SM18-2540D	mg/L	*	1180	5	Not detect	5
OIL & GREASE	EPA 1664	mg/L	10	392	5	Not detect	5
CYANIDE	4500-C/335 3	mg/L	0.046	0 006	0.005	Not detect	0.005
PHOSPHORUS	SM18 4500B5E	mg/L	1*	4 79	0.04	0.36	0 04
ARSENIC	200.7/6010	ug/L	360	12.4	5	5 2	5
BARIUM	200.7/6010	ug/L	*	296	10	46	10
CADMIUM	200.7/6010	ug/L	12'	1	1	Not detect	1
CHROMIUM	200.7/6010	ug/L	3200'	10	5	Not detect	5
LEAD	200 7/6010	ug/L	320'	51	5	Not detect	5
MERCURY	245 1/7470	ug/L	1.1	Not detected	0.2	Not detect	0 2
SILVER	200 7/6010	ug/L	5 3	Not detected	5	Not detect	5
SELENIUM	200 7/6010	ug/L	20	Not detected	5	Not detect	5
PRIORITY POLLUTANT VOLATILES							
ACROLEIN	EPA624/8240	ug/L	780	Not detected	400	Not detect	10
ACRYLONITRILE	EPA624/8240	ug/L	460	Not detected	200	Not detect	5
BENZENE	EPA624/8240	ug/L	1100	500	40	Not detect	1
BROMODICHLOROMETHANE	EPA624/8240	ug/L	*	Not detected	40	Not detect	1
BROMOFORM	EPA624/8240	ug/L	1500	Not detected	40	Not detect	1
BROMOMETHANE	EPA624/8240	ug/L	*	Not detected	80	Not detect	2
CARBON TETRACHLORIDE	EPA624/8240	ug/L	1800	Not detected	40	Not detect	1
CHLOROBENZENE	EPA624/8240	ug/L	590	Not detected	40	Not detect	1
CHLOROETHANE	EPA624/8240	ug/L	*	Not detected	80	Not detect	2
2-CHLOROETHYL VINYL ETHER	EPA624/8240	ug/L	*	Not detected	80	Not detect	2
CHLOROFORM	EPA624/8240	ug/L	1800	Not detected	40	Not detect	1
CHLOROMETHANE	EPA624/8240	ug/L	*	Not detected	80	Not detect	2
DIBROMOCHLOROMETHANE	EPA624/8240	ug/L	*	Not detected	40	Not detect	1
1,1-DICHLOROETHANE	EPA624/8240	ug/L	*	Not detected	40	Not detect	1
1,2-DICHLOROETHANE	EPA624/8240	ug/L	12000	Not detected	40	Not detect	1
1,1-DICHLOROETHENE	EPA624/8240	ug/L	*	Not detected	40	Not detect	1
t-1,2-DICHLOROETHENE	EPA624/8240	ug/L	*	Not detected	40	Not detect	1
1,2-DICHLOROPROPANE	EPA624/8240	ug/L	*	Not detected	40	Not detect	1
c-1,3-DICHLOROPROPENE	EPA624/8240	ug/L	*	Not detected	40	Not detect	1
t-1,3-DICHLOROPROPENE	EPA624/8240	ug/L	*	Not detected	40	Not detect	1
ETHYLBENZENE	EPA624/8240	ug/L	1400	460	40	Not detect	1
METHYLENE CHLORIDE	EPA624/8240	ug/L	9700	Not detected	80	Not detect	2
1,1,2,2-TETRACHLOROETHANE	EPA624/8240	ug/L	1000	Not detected	40	Not detect	1
TETRACHLOROETHENE	EPA624/8240	ug/L	540	Not detected	40	Not detect	1
TOLUENE	EPA624/8240	ug/L	2400	950	40	Not detect	1
1,1,1-TRICHLOROETHANE	EPA624/8240	ug/L	2000	Not detected	40	Not detect	1
1,1,2-TRICHLOROETHANE	EPA624/8240	ug/L	2000	Not detected	40	Not detect	1
TRICHLOROETHENE	EPA624/8240	ug/L	1700	Not detected	40	Not detect	1
TRICHLOROFLUOROMETHANE	EPA624/8240	ug/L	*	Not detected	80	Not detect	2
VINYL CHLORIDE	EPA624/8240	ug/L	5250	Not detected	80	Not detect	2
PRIORITY POLLUTANT ACIDS							
2-CHLOROPHENOL	EPA625/8270	ug/L	200	Not detected	15	Not detect	3
2,4-DICHLOROPHENOL	EPA625/8270	ug/L	200	Not detected	15	Not detect	3
2,4-DIMETHYLPHENOL	EPA625/8270	ug/L	*	420	15	Not detect	3
4,6-DINITRO-O-CRESOL	EPA625/8270	ug/L	765	Not detected	26	Not detect	6
2,4-DINITROPHENOL	EPA625/8270	ug/L	14300	Not detected	26	Not detect	6
2-NITROPHENOL	EPA625/8270	ug/L	*	Not detected	26	Not detect	6
4-NITROPHENOL	EPA625/8270	ug/L	790	Not detected	26	Not detect	6

Kerr-Mcgee Chemical, LLC
Toledo Tie Treatment Site
Time Critical Removal

Summary of Water Treatment System Analytical Results

p-CHLORO-m-CRESOL	EPA625/8270	ug/L	*	Not detected	26	Not detect	6
PENTACHLOROPHENOL	EPA625/8270	ug/L	TABLE 7-13	Not detected	26	Not detect	6
PHENOL	EPA625/8270	ug/L	5300	Not detected	15	Not detect	3
2,4,6-TRICHLOROPHENOL	EPA625/8270	ug/L	16	Not detected	26	Not detect	6
PRIORITY POLLUTANT BASE/NEUTRALS							
ACENAPHTHENE	EPA 625/8270	ug/L	67	600	150	Not detect	3
ACENAPHTHYLENE	EPA 625/8270	ug/L	*	100	15	Not detect	3
ANTHRACENE	EPA 625/8270	ug/L	*	190	15	Not detect	3
BENZIDINE	EPA 625/8270	ug/L	0.0053	Not detected	26	Not detect	6
BENZO(a)ANTHRACENE	EPA 625/8270	ug/L	*	220	26	Not detect	6
BENZO(a)PYRENE	EPA 625/8270	ug/L	*	85	15	Not detect	3
3,4-BENZOFLUORANTHENE	EPA 625/8270	ug/L	*	64	26	Not detect	6
BENZO(ghi)PERYLENE	EPA 625/8270	ug/L	*	Not detected	26	Not detect	6
BENZO(k)FLUORANTHENE	EPA 625/8270	ug/L	*	82	26	Not detect	6
bis(2-CHLOROETHOXY)METHANE	EPA 625/8270	ug/L	*	Not detected	26	Not detect	6
bis(2-CHLOROETHYL)ETHER	EPA 625/8270	ug/L	13.6^	Not detected	15	Not detect	3
bis(2-CHLOROISOPROPYL)ETHER	EPA 625/8270	ug/L	4360^	Not detected	26	Not detect	6
bis(2-ETHYLHEXYL)PHTHALATE	EPA 625/8270	ug/L	1100	Not detected	26	Not detect	6
4-BROMOPHENYL PHENYL ETHER	EPA 625/8270	ug/L	*	Not detected	26	Not detect	6
BUTYL BENZYL PHTHALATE	EPA 625/8270	ug/L	230	Not detected	26	Not detect	6
2-CHLORONAPHTHALENE	EPA 625/8270	ug/L	*	Not detected	51	Not detect	11
4-CHLOROPHENYL PHENYL ETHER	EPA 625/8270	ug/L	*	Not detected	26	Not detect	6
CHRYSENE	EPA 625/8270	ug/L	*	150	15	Not detect	3
DIBENZO(a,h)ANTHRACENE	EPA 625/8270	ug/L	*	Not detected	26	Not detect	6
1,2-DICHLOROBENZENE	EPA 625/8270	ug/L	160	Not detected	15	Not detect	3
1,3-DICHLOROBENZENE	EPA 625/8270	ug/L	250	Not detected	15	Not detect	3
1,4-DICHLOROBENZENE	EPA 625/8270	ug/L	110	Not detected	15	Not detect	3
3,3'-DICHLOROBENZIDINE	EPA 625/8270	ug/L	0.2	Not detected	26	Not detect	6
DIETHYL PHTHALATE	EPA 625/8270	ug/L	2600	Not detected	26	Not detect	6
DIMETHYL PHTHALATE	EPA 625/8270	ug/L	1700	Not detected	26	Not detect	6
DI-N-BUTYL PHTHALATE	EPA 625/8270	ug/L	350	Not detected	26	Not detect	6
2,4-DINITROTOLUENE	EPA 625/8270	ug/L	91	Not detected	51	Not detect	11
2,6-DINITROTOLUENE	EPA 625/8270	ug/L	950	Not detected	51	Not detect	11
DI-n-OCTYL PHTHALATE	EPA 625/8270	ug/L	*	Not detected	26	Not detect	6
1,2-DIPHENYLHYDRAZINE	EPA 625/8270	ug/L	*	Not detected	26	Not detect	6
FLUORANTHENE	EPA 625/8270	ug/L	200	970	150	Not detect	3
FLUORENE	EPA 625/8270	ug/L	*	660	15	Not detect	3
HEXACHLOROBENZENE	EPA 625/8270	ug/L	0.99	Not detected	26	Not detect	6
HEXACHLOROBUTADIENE	EPA 625/8270	ug/L	500^	Not detected	26	Not detect	6
HEXACHLOROCYCLOPENTADIENE	EPA 625/8270	ug/L	*	Not detected	51	Not detect	11
HEXACHLOROETHANE	EPA 625/8270	ug/L	*	Not detected	26	Not detect	6
INDENO(123-cd)PYRENE	EPA 625/8270	ug/L	*	40	26	Not detect	6
ISOPHORONE	EPA 625/8270	ug/L	6000	Not detected	26	Not detect	6
NAPHTHALENE	EPA 625/8270	ug/L	160	7300	260	Not detect	6
NITROBENZENE	EPA 625/8270	ug/L	*	Not detected	26	Not detect	6
n-NITROSO-DIMETHYLAMINE	EPA 625/8270	ug/L	160^	Not detected	26	Not detect	6
n-NITROSO-DI-n-PROPYLAMINE	EPA 625/8270	ug/L	12.4^	Not detected	26	Not detect	6
n-NITROSO-DIPHENYLAMINE	EPA 625/8270	ug/L	290	Not detected	26	Not detect	6
PHENANTHRENE	EPA 625/8270	ug/L	*	1600	150	Not detect	4
PYRENE	EPA 625/8270	ug/L	*	440	15	Not detect	3
1,2,4-TRICHLOROBENZENE	EPA 625/8270	ug/L	150	Not detected	26	Not detect	6

* No Ohio EPA Standard for this analyte

^ No Ohio EPA Standard for Warmwater Habitat - Outside Mixing Zone Maximum for this analyte. The standard listed is for Warmwater Habitat - Outside Mixing Zone Human Health 30-day Average.

' Standard determined assuming an average water hardness of 200 mg/l

+ pH result is based on laboratory measurements.

Kerr-Mcgee Chemical, LLC
Toledo Tie Treatment Site
Time Critical Removal

Proposed Sampling Schedule

(revised as of 11/11/98)

Description	Approximate Sampling Date	Sample Description	Analysis	Turn Around	Approximate Sampling Results Due Date
Representative Sample	10/13/98	Surface Water	All Parameters	Regular	
Batch Treatment 1	10/29/98	Effluent	All Parameters	Rush	
Effluent Sample	11/6/98	Effluent	All Parameters	Rush	11/12/98
Day 1 Continuous Discharge	11/9/98	Influent	All Parameters	Rush	11/13/98
Day 1 Continuous Discharge	11/9/98	Effluent	All Parameters	Rush	11/13/98
Day 2 Continuous Discharge	11/16/98	Effluent	Contaminants of Concern	Regular	11/27/98
Day 3 Continuous Discharge	11/18/98	Effluent	Contaminants of Concern	Regular	11/30/98
Day 4 Continuous Discharge	11/20/98	Effluent	Contaminants of Concern	Regular	12/2/98
Day 5 Continuous Discharge	11/23/98	Effluent	Contaminants of Concern	Regular	12/3/98
Week 2 Continuous Discharge	11/30/98	Effluent	Contaminants of Concern	Regular	12/9/98
Week 3 Continuous Discharge	12/7/98	Effluent	Contaminants of Concern	Regular	12/16/98
Week 3 Continuous Discharge	12/14/98	Influent	All Parameters	Rush	12/23/98
Week 4 Continuous Discharge	12/21/98	Effluent	Contaminants of Concern	Regular	12/30/98
Week 5 Continuous Discharge	12/28/98	Effluent	Contaminants of Concern	Regular	1/6/99
Week 6 Continuous Discharge	1/4/99	Effluent	Contaminants of Concern	Regular	1/13/99
Week 7 Continuous Discharge	1/11/99	Effluent	Contaminants of Concern	Regular	1/20/99
Week 8 Continuous Discharge	1/18/99	Effluent	Contaminants of Concern	Regular	1/27/99
Week 9 Continuous Discharge	1/25/99	Effluent	Contaminants of Concern	Regular	2/3/99
Week 10/11 Continuous Discharge	2/8/99	Effluent	Contaminants of Concern	Regular	2/17/99

1. Gray shading indicates sampling events that are not currently anticipated to occur because the operation of the water treatment system should cease on 12/30/98 (based on the current schedule).

2. "All Parameters" includes pH, TSS, Oil & Grease, Cyanide, 8 RCRA metals, Phosphorus, VOCs, SVOCs.

3. "Contaminants of Concern" will include any of the compounds encompassed by "All Parameters" that were detected at levels that exceed the Ohio EPA's surface water discharge standards. The "Contaminants of Concern" will be based on the representative sample taken directly from Williams Ditch and revised based on the samples taken from the influent to the water treatment system.